

BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2. Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Sharon Gerecht	POSITION TITLE		
eRA COMMONS USER NAME sgerech1	Assistant Professor		
EDUCATION/TRAINING (<i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i>)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Technion-Israel Inst. Of Technology, Haifa, Israel	BA	1994	Biology
Tel-Aviv University, Tel-Aviv, Israel	MSc	1999	Medical Sciences
Technion-Israel Inst. Of Technology, Haifa, Israel	PhD	2004	Biotechnology
Technion-Israel Inst. Of Technology, Haifa, Israel	Postdoctoral	2004	Bioengineering
MIT- Massachusetts Inst. Of Technology, Cambridge	Postdoctoral	2004	Bioengineering

A. Positions and Honors

Positions and Employment

1994–1996	Head of Clinical Laboratory, Professional Officer, Medical Corp, IDF.
1996–1997	Head of Plant Tissue Culture Laboratory, Ben Zur Nurseries & Laboratory Ltd.
1997–1999	MSc student, Faculty of Medicine, Tel-Aviv University
1999–2000	Research Assistant, <i>In-Sight</i> Biotechnology Company Ltd.
2000–2004	PhD student, Biotechnology interdisciplinary Unit, Technion, Israel
2004	Postdoctoral Research Associate, Faculty of Medicine, Technion, Israel
2004–2007	Postdoctoral Fellow, Bioengineering, MIT, Cambridge, MA
2007- Present	Assistant Professor, Chemical and Biomolecular Engineering, JHU
2007- Present	Member of the Institute for NanoBioTechnology (INBT), JHU
2009- Present	Lead Investigator, Johns Hopkins Engineering in Oncology Center

Award and Honors

2005–2007	Postdoctoral Fellowship Award, Juvenile Diabetes Research Foundation
2008	Maryland Academy of Sciences Outstanding Young Engineer Award, Allan C. Davis Medal
2008-2012	American Heart Association National Scientist Development Award
2009-2011	March of Dimes Basil O'Connor Starter Scholar Research Award
2009	North America Vascular Biology Organization Junior Investigator Award

B. Selected Peer-reviewed Publications (from 46 peer-reviewed publications)

1. **Gerecht-Nir S**, Ziskind A, Cohen S, Itskovitz-Eldor J. Human embryonic stem cells as an in vitro model for human vascular development and the induction of vascular differentiation. *Lab Invest* 2003; 83:1811–20
2. **Gerecht-Nir S**, Osenberg S, Nevo O, Ziskind A, Coleman R, Itskovitz-Eldor J. Vascular development in early human embryos and in teratoma derived from human embryonic stem cells. *Biol Reprod* 2004; 71:2029–36.
3. **Gerecht-Nir S**, Cohen S and Itskovitz-Eldor J. Bioreactor cultivation enhances the efficiency of human embryoid body (hEB) formation and differentiation. *Biotechnol Bioeng.* 2004; 86: 493-502.
4. **Gerecht-Nir S**, Cohen S, Ziskind A, Itskovitz-Eldor J. 3-D porous alginate scaffolds provide a conducive environment for the generation of well vascularized embryoid bodies from human embryonic stem cells. *Biotechnol Bioeng* 2004; 88:313–20.
5. Dang S, **Gerecht-Nir S**, Chen J, Itskovitz-Eldor J and Zandstra PW. Controlled scalable embryonic stem cell differentiation culture. *Stem Cells.* 2004; 22:275-282.
6. **Gerecht-Nir S**, Dazard J-E, Golan-Mashiach M, Osenberg S, Botvinnik A, Amariglio N, Domany E, Rechavi

- G, Givol D, Itskovitz-Eldor J. Vascular gene expression and phenotypic correlation during differentiation of human embryonic stem cells. *Dev Dyn* 2005; 232:488–98.
7. **Gerecht S**^{*}, Bettinger^{*} CJ, Zhang Z, Borenstein J, Vunjak-Novakovic G, Langer R. The effect of actin disrupting agents on contact guidance of human embryonic stem cells. *Biomaterials* 2007; 28:4068–77.
 8. Ferreira L, **Gerecht S**, Shieh H, Watson, N, Rupnick, M.A. Dallabrida, S.M Vunjak-Novakovic G, Langer R. Vascular progenitor cells isolated from human embryonic stem cells give rise to endothelial and smooth muscle-like cells and form vascular network in vivo. *Circ Res* 2007; 101:286–94.
 9. **Gerecht S**, Burdick JA, Ferreira LS, Townsend SA, Langer R, Vunjak-Novakovic G. Hyaluronic acid hydrogel for controlled self-renewal and differentiation of human embryonic stem cells. *Proc Natl Acad Sci U S A* 2007; 104:11298–303.
 10. Hanjaya-Putra D, Yee J, Ceci D, Truitt R, Yee Y, **Gerecht S**. Vascular endothelial growth factor and substrate mechanics regulate *in vitro* tubulogenesis of endothelial progenitor cells. *J Cell Mol Med*. In press. doi:10.1111/j.1582-4934.2009.00981.x
 11. Sun G, Shen Y-I, Ho C-C, Kusuma S, **Gerecht S**. Functional Groups Affect Physical and Biological Properties of Dextran-Based Hydrogels *J Biomed Mater Res A*. 2010; 93:1080-1090.
 12. Abaci EH^{*}, Truitt R^{*}, Luong E, Drazer G, **Gerecht S**. Adaptation of oxygen consumption in cultures of human pluripotent stem cells, endothelial progenitor cells and umbilical vein endothelial cells. *Am J Physiol Cell Physiol*. 2010; 298: C1527-37.
 13. Vo E^{*}, Hanjaya-Putra D^{*}, Zha Y, **Gerecht S**. Smooth-muscle-like cells derived from human embryonic stem cells support and augment cord-like structures *in vitro*. *Stem Cell Rev*. 2010;6:237-247.
 14. Dickinson LE, Ho CC, Wang G, Stebe K, **Gerecht S**. Functional surfaces for studying the interaction of hyaluronic acid with cancer cells. *Biomaterials*. 2010; 31:5472-5478.
 15. Dickinson LE, Moura ME, **Gerecht S**. Guiding endothelial progenitor cell tube formation by patterned fibronectin surfaces. *Soft Matter*. 2010; in press. DOI:10.1039/C0SM00233J.